

# BRIAN I. MAGI

Brian.Magi@uncc.edu

University of North Carolina at Charlotte  
Department of Geography and Earth Sciences  
9201 University City Blvd, Charlotte, NC, 28223  
<http://brianmagi.uncc.edu/>

## EDUCATION

---

- 2006      **Ph. D., University of Washington**, Atmospheric Sciences  
1998      **B. Sc., University of Arizona**, Physics and Applied Math, Cum Laude

## PROFESSIONAL EXPERIENCE

---

- 2017-  
present      **Associate Professor of Atmospheric Science**, Department of Geography and Earth Sciences, University of North Carolina at Charlotte, Charlotte, North Carolina, USA  
2011-  
2017      **Assistant Professor of Atmospheric Science**, Department of Geography and Earth Sciences, University of North Carolina at Charlotte, Charlotte, North Carolina, USA  
2010-  
2011      **Associate Research Scholar**, Atmospheric and Oceanic Sciences Program and Carbon Mitigation Initiative, Princeton University, Princeton, New Jersey, USA  
2007-  
2009      **Postdoctoral Research Associate**, Atmospheric and Oceanic Sciences Program, Princeton University, Princeton, New Jersey, USA  
2006      **Postdoctoral Research Associate**, Department of Atmospheric Sciences, University of Washington, Seattle, Washington, USA  
1999-  
2006      **Graduate Research Assistant**, Department of Atmospheric Sciences, University of Washington, Seattle, Washington, USA

## TEACHING

---

Details about teaching available at <http://clas-pages.uncc.edu/mesas/teaching/>

- **Global Environmental Change** (ESCI 3101, 3 credit hours, ~50 students): Introduction to modern-day climate change via directed readings and informal writing
- **Physical Meteorology** (METR 3220, 3 credit hours, ~15 students): Introductions to cloud physics, sunlight in the atmosphere, and the role of weather in air quality via quantitative problem sets
- **Atmospheric Chemistry** (METR 4220 / ESCI 5220, 3 credit hours, ~15 students): Discussion of stratospheric chemistry and the ozone layer, air quality chemistry, with quantitative problem sets and a course project
- **Statistics and Data Analysis in Earth Sciences** (ESCI 4000 / ESCI 5000, 3 credits, ~18 students): Applications of univariate statistical methods from data analysis and hypothesis testing within the context of Earth Sciences
- **Climate Dynamics** (METR 4205 / ESCI 5205, 3 credit hours, course in preparation for Spring 2017), treatment of modes of natural variability, such as El Nino, and their effects on weather and climate
- **Atmospheric Thermodynamics** (METR 3210, 3 credit hours, ~15 students): Discussion of the chemical composition and behavior of air, and how air moves to create weather
- **Applied Climatology** (METR 4150 / ESCI 5150, 3 credit hours, Writing-Intensive, ~10 students), small enrollment course exploring aspects of climatology within the context of modern-day climate change with process-based writing serving as the evaluation mechanism for the course

## REFEREED PUBLICATIONS (ADVISEE, GROUP MEMBER)

---

All publications available at <https://clas-pages.uncc.edu/mesas/publications/>

ORCID <http://orcid.org/0000-0001-8131-0083>

Publons/ResearcherID <https://publons.com/researcher/2372437/brian-i-magi/>

ResearchGate [https://www.researchgate.net/profile/Brian\\_Magi](https://www.researchgate.net/profile/Brian_Magi)

- 2019 In final review with pre-print discussion as of October 2019 Li, F., Val Martin, M., Hantson, S., Andreae, M. O., Arneth, A., Lasslop, G., Yue, C., Bachelet, D., Forrest, M., Kaiser, J. W., Kluzek, E., Liu, X., Melton, J. R., Ward, D. S., Darmenov, A., Hickler, T., Ichoku, C., **Magi, B. I.**, Sitch, S., van der Werf, G. R., and Wiedinmyer, C.: Historical (1700–2012) Global Multi-model Estimates of the Fire Emissions from the Fire Modeling Intercomparison Project (FireMIP), *Atmospheric Chemistry and Physics Discussions*, <https://doi.org/10.5194/acp-2019-37>
- B. Magi**, **C. Cupini**, J. Francis, M. Green, and C. Hauser, Evaluation of PM2.5 measured in an urban setting using a low-cost optical particle counter and a Federal Equivalent Method Beta Attenuation Monitor, *Aerosol Science and Technology*, 1-13, <https://www.tandfonline.com/doi/full/10.1080/02786826.2019.1619915>
- 2018 Coughlan, M., **B. Magi**, and K. Derr, 2018: A Global Analysis of Hunter-Gatherers, Broadcast Fire Use, and Lightning-Fire-Prone Landscapes, *Fire*, 1, 41, <https://www.mdpi.com/2571-6255/1/3/41>
- Hawthorne, D., C. J. Courtney Mustaphi, J. C. Aleman, O. Blarquez, D. Colombaroli, A.-L. Daniau, J. R. Marlon, M. Power, B. Vannière, Y. Han, S. Hantson, N. Kehrwald, **B. Magi**, X. Yue, C. Carcaillet, R. Marchant, A. Ogunkoya, E. N. Githumbi, and R. M. Muriuki, 2018: Global Modern Charcoal Dataset (GMCD): A tool for exploring proxy-fire linkages and spatial patterns of biomass burning, *Quaternary International*, 488, 3-17, Special Issue on The Human-Climate-Fire Nexus: <http://www.sciencedirect.com/science/article/pii/S104061821630831X>
- Rabin, S. S., D. S. Ward, S. L. Malyshev, **B. I. Magi**, E. Shevliakova, and S. W. Pacala (2018), A fire model with distinct crop, pasture, and non-agricultural burning: use of new data and a model-fitting algorithm for FINAL.1. *Geoscientific Model Development*, 11, 815-842, <https://www.geosci-model-dev.net/11/815/2018/>
- 2017 van Marle, M. J. E., S. Kloster, **B. I. Magi**, J. R. Marlon, A. L. Daniau, R. D. Field, A. Arneth, M. Forrest, S. Hantson, N. M. Kehrwald, W. Knorr, G. Lasslop, F. Li, S. Mangeon, C. Yue, J. W. Kaiser, and G. R. van der Werf (2017), Historic global biomass burning emissions for CMIP6 (BB4CMIP) based on merging satellite observations with proxies and fire models (1750–2015). *Geoscientific Model Development*, 10, 3329-3357, <https://www.geosci-model-dev.net/10/3329/2017/> and data at <http://www.globalfiredata.org/ar6historic.html>
- 2016 **Magi, B. I.**, **T. Winesett**, and D. J. Cecil (2016), Estimating Lightning from Microwave Remote Sensing Data, *Journal of Applied Meteorology and Climatology*, 55, 2021-2036, <http://journals.ametsoc.org/doi/abs/10.1175/JAMC-D-15-0306.1>
- Hantson, S., S. Kloster, M. Coughlan, A.-L. Daniau, B. Vannière, T. Brücher, N. Kehrwald, and **B. I. Magi** (2016), Fire in the Earth System: Bridging Data and Modeling Research, *Bulletin of the American Meteorological Society*, 97(6), 1069-1072, <http://journals.ametsoc.org/doi/full/10.1175/BAMS-D-15-00319.1>
- Marlon, J. R., R. Kelly, A.L. Daniau, B. Vannière, M.J. Power, P. Bartlein, P. Higuera, O. Blarquez, S. Brewer, T. Brücher, A. Feurdean, G.G. Romera, V. Iglesias, S.Y. Maezumi, **B. Magi**, C.J. Courtney Mustaphi, and T. Zhihai (2016) Reconstructions of biomass burning from sediment-charcoal records to improve data–model comparisons, *Biogeosciences*, 13, 3225-3244, 10.5194/bg-13-3225-2016, <http://www.biogeosciences.net/13/3225/2016/bg-13-3225-2016.html>

- Kehrwald, N., J. C. Aleman, M. Coughlan, C. J. C. Mustaphi, E. N. Githumbi, **B. I. Magi**, J. R. Marlon, M. J. Power (2016), One thousand years of fires: Integrating proxy and model data, *Frontiers of Biogeography*, vol. 8, issue 1, <http://escholarship.org/uc/search?entity=fb;volume=8;issue=1>
- Eppes, M. C., **B. Magi**, B. Hallet, E. Delmelle, P. Mackenzie-Helnwein, K. Warren, and S. Swami (2016), Deciphering the role of solar-induced thermal stresses in rock weathering, *Geological Society of America Bulletin*, 128, 1315-1338, <http://gsabulletin.gsapubs.org/content/128/9-10/1315.abstract>
- 2015 Rabin, S., **Magi, B. I.**, Shevliakova, E., and Pacala, S (2015), Quantifying regional, time-varying effects of cropland and pasture on vegetation fire, *Biogeosciences*, 12, 6591-6604, doi:10.5194/bg-12-6591-2015, <http://www.biogeosciences.net/12/6591/2015/bg-12-6591-2015.html>
- Magi, B.I.** (2015), Global Lightning Parameterization Based on CMIP5 Climate Model Output, *Journal of Atmospheric and Oceanic Technology*, 32, 434-452, doi:10.1175/JTECH-D-13-00261.1, <http://journals.ametsoc.org/doi/abs/10.1175/JTECH-D-13-00261.1>
- 2012 **Magi, B. I.**, Rabin, S., Shevliakova, E., and Pacala, S (2012), Separating agricultural and non-agricultural fire seasonality at regional scales, *Biogeosciences*, 9, 3003-3012, doi:10.5194/bg-9-3003-2012, <http://www.biogeosciences.net/9/3003/2012/bg-9-3003-2012.html>
- 2011 Donner, L.J, B.L. Wyman, R. Hemler, L.W. Horowitz, Y. Ming, M. Zhao, J. Golaz, P. Ginoux, S. Lin, M.D. Schwarzkopf, J. Austin, ..., **B.I. Magi**, ..., et al. (2011), The Dynamical Core, Physical Parameterizations, and Basic Simulation Characteristics of the Atmospheric Component of the GFDL Global Coupled Model CM3, *Journal of Climate*, 24, 3484-3519, doi:10.1175/2011JCLI3955.1, <http://journals.ametsoc.org/doi/abs/10.1175/2011JCLI3955.1>
- 2009 **Magi, B.I.** (2009), Chemical apportionment of southern African aerosol mass and optical depth, *Atmospheric Chemistry and Physics*, 9, 7643-7655, doi:10.5194/acp-9-7643-2009, <http://www.atmos-chem-phys.net/9/7643/2009/acp-9-7643-2009.html>
- Magi, B.I.**, P. Ginoux, Y. Ming, and V. Ramaswamy (2009), Evaluation of tropical and extratropical Southern Hemisphere African aerosol properties simulated by a climate model, *Journal of Geophysical Research*, 114, D14204, doi:10.1029/2008JD011128, <http://onlinelibrary.wiley.com/doi/10.1029/2008JD011128/full>
- 2008 **Magi, B.I.**, Q. Fu, J. Redemann, and B. Schmid (2008), Using aircraft measurements to estimate the magnitude and uncertainty of the shortwave direct radiative forcing of southern African biomass burning aerosol, *Journal of Geophysical Research*, 113, D05213, doi:10.1029/2007JD009258, <http://onlinelibrary.wiley.com/doi/10.1029/2007JD009258/full>
- Magi, B.**, M. Coughlan, A. Edwards, M. Hurteau, A. Petty, F. Seijo, and C. Wiedimyer (2008), Meeting Report from AIMES (Analysis, Integration and Modeling of the Earth System) Young Scholar's Network Workshop on Cultural Uses and Impacts of Fire: Past, Present, and Future, *Eos*, 89(40), doi:10.1029/2008ES002414, <http://onlinelibrary.wiley.com/doi/10.1029/2008EO400009/full>
- 2007 **Magi, B.I.**, Q. Fu, and J. Redemann (2007), A methodology to retrieve self-consistent aerosol optical properties using common aircraft measurements, *Journal of Geophysical Research*, 112, D24S12, doi:10.1029/2006JD008312, <http://onlinelibrary.wiley.com/doi/10.1029/2006JD008312/full>
- 2005 **Magi, B.I.**, P.V. Hobbs, T.W. Kirchstetter, T. Novakov, D.A. Hegg, S. Gao, J. Redemann, and B. Schmid (2005), Aerosol Properties and Chemical Apportionment of Aerosol Optical Depth at Locations off the United States East Coast in July and August 2001, *Journal of the Atmospheric Sciences*, 62(4), 919-933, doi:10.1175/JAS3263.1, <http://journals.ametsoc.org/doi/abs/10.1175/JAS3263.1>

- 2003 **Magi, B.I.**, P.V. Hobbs, B. Schmid, and J. Redemann (2003), Vertical profiles of light scattering, light absorption, and single scattering albedo during the dry, biomass burning season in southern Africa and comparisons of in situ and remote sensing measurements of aerosol optical depths, *Journal of Geophysical Research*, 108(D13), 8504, doi:10.1029/2002JD002361, <http://onlinelibrary.wiley.com/doi/10.1029/2002JD002361/full>
- Gao, S., D.A. Hegg, P.V. Hobbs, T.W. Kirchstetter, **B.I. Magi**, and M. Sadilek (2003), Water-soluble organic components in aerosols associated with savanna fires in southern Africa: Identification, evolution, and distribution, *Journal of Geophysical Research*, 108(D13), 8491, doi:10.1029/2002JD002324, <http://onlinelibrary.wiley.com/doi/10.1029/2002JD002324/full>
- Kirchstetter, T.W., T. Novakov, P.V. Hobbs, and **B. Magi** (2003), Airborne measurements of carbonaceous aerosols in southern Africa during the dry biomass burning season, *Journal of Geophysical Research*, 108(D13), 8476, doi:10.1029/2002JD002171, <http://onlinelibrary.wiley.com/doi/10.1029/2002JD002171/full>
- Magi, B.I.**, and P.V. Hobbs (2003), Effects of humidity on aerosols in southern Africa during the biomass burning season, *Journal of Geophysical Research*, 108(D13), 8495, doi:10.1029/2002JD002144, <http://onlinelibrary.wiley.com/doi/10.1029/2002JD002144/full>